

REMARKS

The Office action of May 17, 2006, has been carefully considered.

Claims 1, 2 and 4 have been rejected under 35 USC 102(b) as anticipated by Edwards et al, while Claim 3 has been rejected under 35 USC 103(a) over Edwards et al in view of Moorman et al.

Claims 1 through 4 have now been canceled and replaced by a new set of Claims 5 through 8 written in better form for U.S. practice. In addition, in new Claim 5, the recitation of "a tubular application device" has been replaced by "a hollow needle." Recitation of the hollow needle as the application device was found previously in Claims 2 and 3.

It is known in the art to perform hyperthermia by antennas introduced in the body either through catheters or needles. Catheters are introduced through anatomical ducts, such as the intestine, esophagus, veins, urethra, etc., whereas needles are used to puncture tissues in any direction. Catheters are normally flexible in order to follow an anatomical duct, while needles are stiff and normally made of metal.

All of the embodiments disclosed in Edwards are directed to a catheter adapted to move along an anatomical duct and provided with a stylet movable in a direction forming an angle with respect to the central axis of the catheter. This stylet comprises a solid core needle suitable for creating a passage in the duct into which the catheter has been introduced in order to reach a target area for treatment. There is no disclosure or suggestion in Edwards et al of replacing the flexible catheter with a needle.

Thus, while both Edwards et al and the invention are directed to devices for introducing an antenna into the human

body, Edwards differs from the invention in the use of a flexible catheter as opposed to the claimed hollow needle.

For this reason, Edwards clearly does not anticipate the claimed invention.

Moorman et al is directed to a modular biopsy, ablation and delivery needle apparatus that permits a biopsy needle to be inserted into a delivery needle and, absent the biopsy needle, allows an inner ablation needle to be introduced and engaged with the delivery needle to form a microwave antenna. This is the type of device shown in Figure 1 (prior art) of the present application. The drawback of this type of device is shown in Figures 2A and 2B of the present application; when it is necessary to apply hyperthermia to a large tissue mass, it cannot be done in a minimally invasive manner.

Edwards solves a different problem from that of Moorman et al; Edwards utilizes a flexible catheter in order to follow an anatomical duct to a position in proximity of a target area, which lays substantially in a plane orthogonal to the catheter and to the anatomical duct. Once the catheter is positioned in the duct, it is necessary to have the needle puncture the duct to reach the target area for irradiation, so a lateral opening is absolutely necessary, and a rotation of the catheter is carried out in order to orient the needle with respect to the target area.

If the target area of Edwards is large, it is necessary to withdraw the irradiating element into the catheter, move the catheter along the duct, and puncture the duct again corresponding to another point adjacent the already treated target area. This is the same drawback as Moorman et al and the prior art in general, and the result is a surgery that is not minimally invasive.

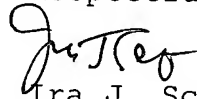
According to the invention, the problem is solved by

providing a metal needle with a lateral opening in the metal sheath of the needle so that the inner conductor can be withdrawn, the needle rotated, and then the inner conductor again caused to puncture the target area in a different angular position, thus covering a large target area in a minimally invasive manner.

Thus, the disclosures of Edwards and Moorman et al, taken in combination, would not lead one of ordinary skill in the art to solve the essential problem solved by the invention, and withdrawal of these rejections is requested.

In view of the foregoing amendments and remarks, Applicants submit that the present application is now in condition for allowance. An early allowance of the application with amended claims is earnestly solicited.

Respectfully submitted,



Ira J. Schultz

Registration No. 28666

LAW OFFICES
DENNISON, SCHULTZ & MACDONALD
SUITE 105
1727 KING STREET
ALEXANDRIA, VIRGINIA 22314-2700
703 837-9600